Washington State Department of Transportation

Addendum to the *Washington State Freight Rail Plan 1998 Update*

Introduction

This document represents an addendum to the *Washington State Freight Rail Plan 1998 Update.* It contains the results of the analyses of four project candidates that met the benefit-cost criterion to qualify them for assistance funds derived from the Washington State Freight Rail Assistance Account and Federal Railroad Administration Local Rail Freight Assistance Account. Project locations are shown with each project.

Reference should be made to the 1998 Update for the background on composition and use of the Washington rail system as well as the methodology used in analyzing the project candidates. The methodology follows that derived by the Federal Railroad Administration for application in its Local Rail Freight Assistance Program. It is a present-value benefit-cost methodology, which uses a 10-year planning horizon and variable discount rate (depending on the current cost of borrowing less the inflationary factor). A rate of 4.3 percent was used in these analyses.

Creston Siding

The Northwest Lincoln County Regional Public Development Authority (NWLCRPDA) is coordinating the location of two new industries that will use a common rail facility. A new rail siding to be constructed on the Palouse River and Coulee City Railroad (PCC) near Creston is an essential component of the facility.

Service Area Transportation

The community of Creston is located some 60 miles west of Spokane in a rural agricultural area of Lincoln County. The only significant highway serving the area is US 2. Rail service is provided by the Cheney to Coulee City branch of the PCC, which connects with the Burlington Northern and Santa Fe Railroad at the former point and terminates at the latter. The project location is shown on page 4.

Line Status

The Coulee City branch of the PCC is a light density line, which depends almost solely on agricultural traffic and has been the subject of assistance funding in the past. The PCC, as a short-line operator of former Class I branch lines, has been experiencing financial difficulties and the location of new rail-using businesses will provide needed revenue.

Assistance Requested

The request for assistance consists of funding to construct the new siding. Funding to construct the track into the new industrial facility is an important factor in locating the business. The commodities are bulk materials moving over long distances, ideally suited for rail transportation.

Benefit-Cost Analysis

The benefit-cost analysis is conducted using the late 1990 LRFA methodology with the standard 10-year planning horizon with a discount rate of 4.3 percent.

Project Alternative

The project alternative is new construction.

Null Alternative

The null alternative is continued operation.

Project Cost

The estimated cost to construct the 850-foot-long track is $105,000. No other costs are involved.

Project Benefits

The benefits of the project consist of transportation efficiencies comprised of rail users and railroad operating profits, and the salvage value of project materials at the end of the 10-year planning horizon. Rail traffic is expected to grow from 150 to 365 carloads over the planning horizon.

Benefits-Cost Ratio

Computation of the present values of the cost and benefits for the analysis period results in a benefit-cost ratio of 25.14. The calculations are shown on page 5.

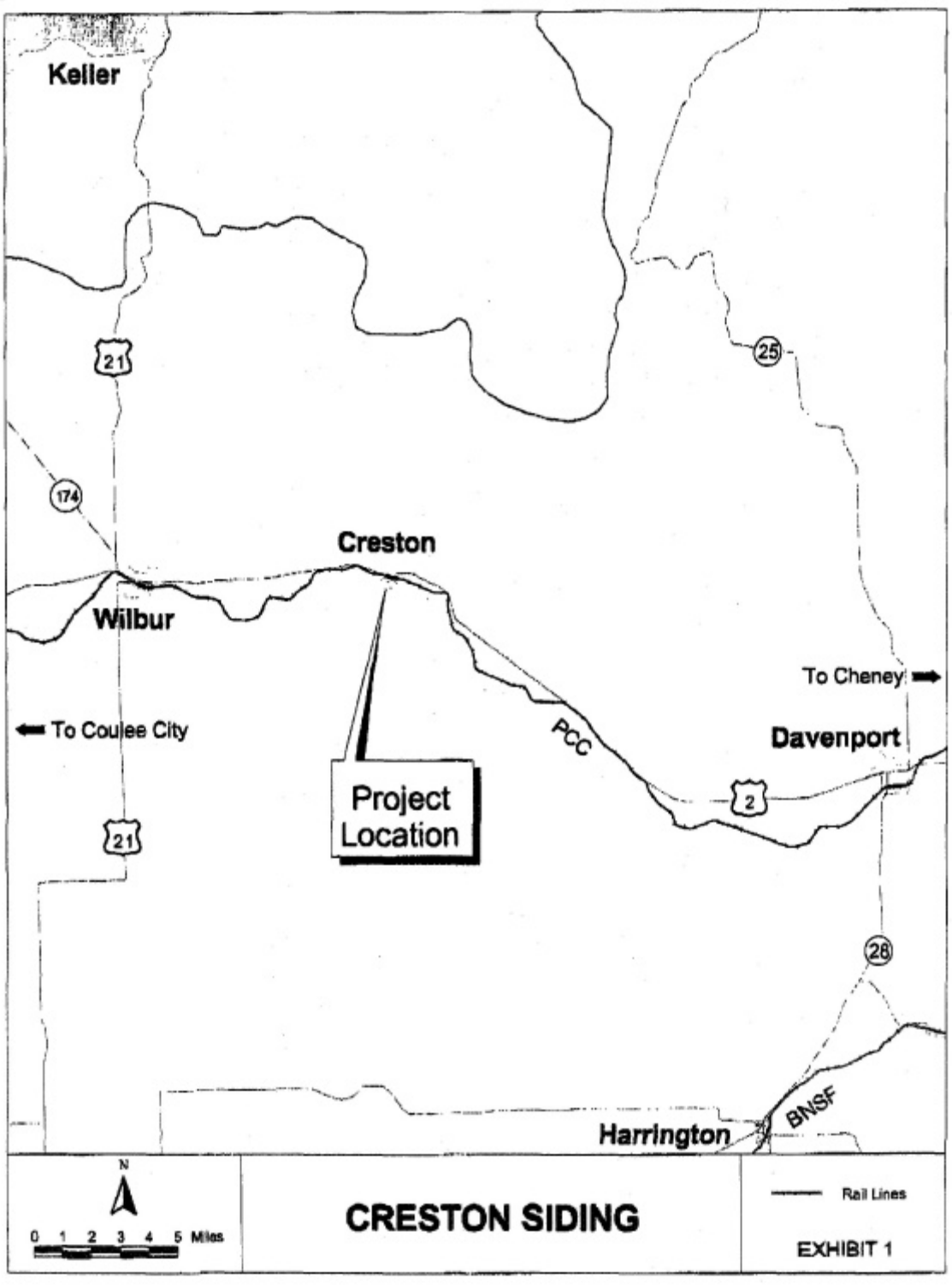
Keller
21
25
174
Creston
Wilbur
To Cheney
To Coulee City
PCC
Davenport
Project Location
2
21
28
BNSF
Harrington
N
0 1 2 3 4 5 Miles
CRESTON SIDING
Rail Lines
EXHIBIT 1

Exhibit 2.
Benefit Cost Analysis
PCC Creston Industry

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Proj. Year	Caln. Year	Net Costs (Undiscounted) New Constr.	NLV	Total	Benefits (Undiscounted) Transp. Efficiency	Salvage	Total	Present Worth Factor	Discounted Totals COSTS	BENEFITS	TOTAL
0	2002										
1	2003	105,000	0	105,000	145,500		145,500	1.0000	105,000	145,500	40,500
2	2004			0	242,500		242,500	0.9585	0	232,400	232,400
3	2005			0	349,200		349,200	0.9187	0	320,800	320,800
4	2006			0	354,000		354,000	0.8806	0	311,700	311,700
5	2007			0	354,000		354,000	0.8440	0	298,800	298,800
6	2008			0	354,000		354,000	0.8090	0	286,400	286,400
7	2009			0	354,000		354,000	0.7754	0	274,500	274,500
8	2010			0	354,000		354,000	0.7433	0	263,100	263,100
9	2011			0	354,000		354,000	0.7124	0	252,200	252,200
10	2012			0	354,000	18,337	372,337	0.6828	0	254,200	254,200
	Totals	105,000	0	105,000	3,215,200	18,337	3,233,537		105,000	2,639,600	2,534,600

Discount Rate	4.3%
NPV	$2,534,600
IRR	#NUM!
B/C Ratio	25.14

Geiger Spur

The Geiger Spur of the Burlington Northern and Santa Fe (BNSF) serves an industrial area in Airway Heights, a western suburb of Spokane, in Spokane County. The area is home to five rail users, all of which receive inbound materials, principally steel.

Service Area Transportation

The major roadway in the project area is US 2, although connections to I-90 are available about three miles distant. Rail service is available from BNSF's Spokane to Everett (Seattle) main track, and the Cheney-Coulee City line of the Palouse River and Coulee City (PCC) is also about three miles away. The project location is shown on page 8.

Line Status

The condition of the line is poor and BNSF plans to discontinue service, having so notified the involved parties. BNSF, however, will donate the line to the county if the county will rehabilitate the line, maintain it in the future, and secure an alternate operator.

Assistance Requested

Spokane County has requested assistance in rehabilitating 2.9 miles of the 5.2-mile-long spur. The remainder of the spur is in good condition. The rehabilitation effort will consist of cross tie replacement, addition of ballast with lining and surfacing of the track, replacement of broken rails and joint bars, and installation of rail anchors.

Benefit-Cost Analysis

The benefit-cost analysis is conducted using the 1990 LRFA methodology with the standard 10-year planning horizon and a discount rate of 4.3 percent.

Project Alternative

The project alternative is rehabilitation and continued operation.

Null Alternative

The null alternative is abandonment.

Project Cost

The cost of the project is comprised of the rehabilitation effort estimated to total $550,305, and the NLV of the track and right-of-way, $375,650. Thus total project costs are equal to $925,955.

Project Benefits

The principal benefits of the project consist of transportation efficiencies comprised of transportation savings related to continued rail use verses alternative transportation. The latter would consist of transloading from rail at an alternate site and trucking to locations along the Geiger Spur. The salvage value of project resources at the end of the planning horizon is another benefit.

Benefit-Cost Ratio

Computation of the present values of the costs and benefits for the analysis period results in a benefit-cost ratio of 1.21. The calculations are shown on page 9.

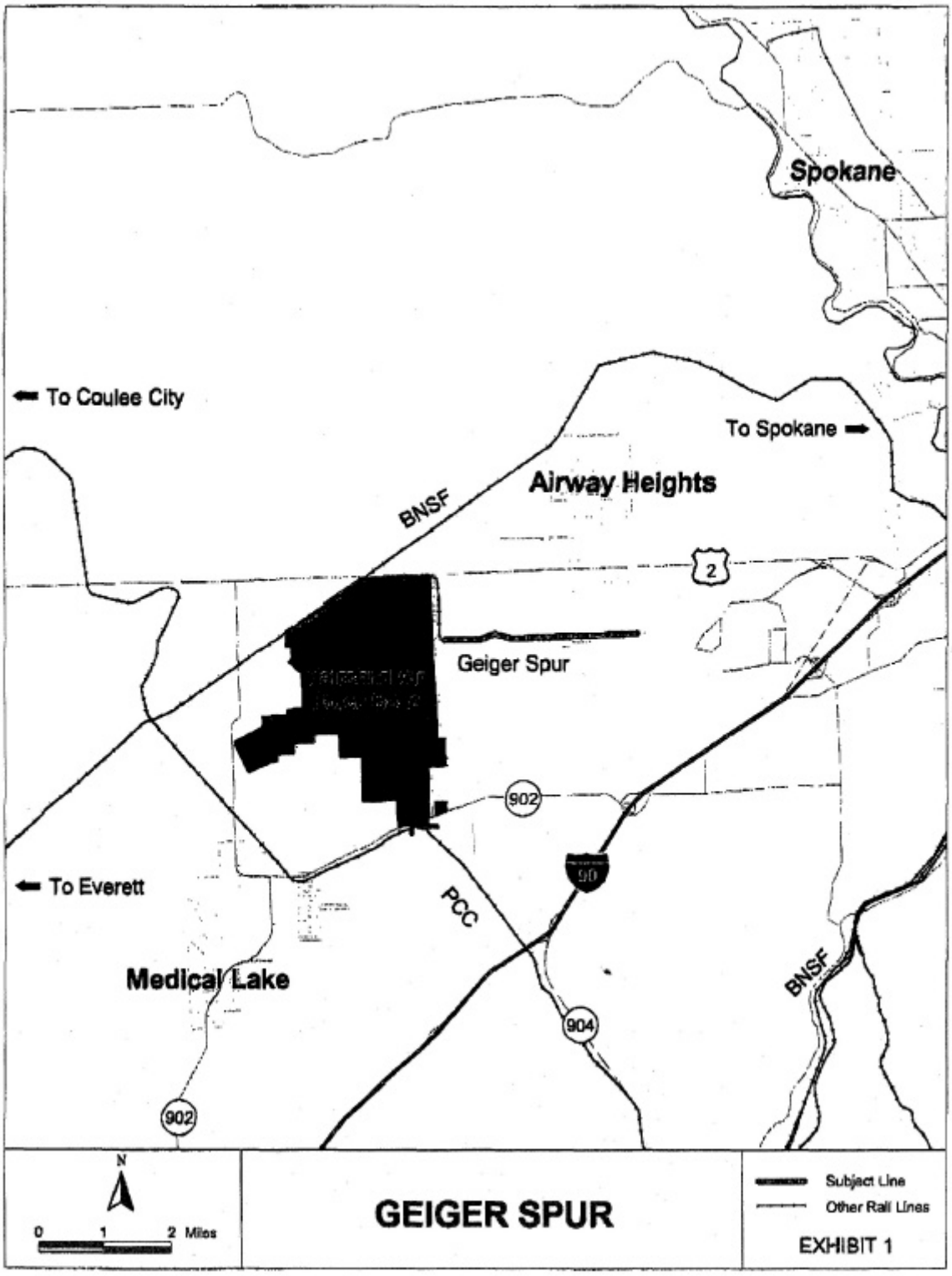
Spokane
To Coulee City
To Spokane
Airway Heights
BNSF
2
Geiger Spur
902
90
To Everett
PCC
Medical Lake
BNSF
904
902
N
0 1 2 Miles
GEIGER SPUR
Subject Line
Other Rail Lines
EXHIBIT 1

Exhibit 2
Benefit Cost Analysis
Geiger Spur

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Proj. Year	Caln. Year	Net Costs (Undiscounted)			Benefits (Undiscounted)			Present Worth Factor	Discounted Totals		
		Rehab	NLV	Total	Transp. Efficiency	Salvage	Total		COSTS	BENEFITS	TOTAL
0	2002										
1	2003	550,305	375,650	925,955	89,400		89,400	1.0000	926,000	89,400	(836,600)
2	2004			0	96,000		96,000	0.9585	0	92,000	92,000
3	2005			0	97,200		97,200	0.9187	0	89,300	89,300
4	2006			0	99,600		99,600	0.8806	0	87,700	87,700
5	2007			0	100,800		100,800	0.8440	0	85,100	85,100
6	2008			0	102,000		102,000	0.8090	0	82,500	82,500
7	2009			0	105,000		105,000	0.7754	0	81,400	81,400
8	2010			0	106,200		106,200	0.7433	0	78,900	78,900
9	2011			0	106,800		106,800	0.7124	0	76,100	76,100
10	2012			0	109,800	420,002	529,802	0.6828	0	361,800	361,800
	Totals	550,305	375,650	925,955	1,012,800	420,002	1,432,802		926,000	1,124,200	198,200

Discount Rate	4.3%
NPV	$198,200
IRR	3.7%
B/C Ratio	1.21

Frederickson – Eatonville

The Mountain Division of Tacoma Rail (TRMD) operates a former Weyerhaeuser Company railroad that runs from Tacoma to Chehalis with a branch from Fredrickson to Morton. The railroad, now owned by the city of Tacoma, has been the subject of project analyses appearing in several prior state freight rail plans and updates.

Service Area Transportation

Interstate 5 (I-5) is the principal highway serving the service territory of the railroad. A number of US and State routes connect with I-5, among them US 12 and SR 161 and 7. The latter two most closely follow the route of the railroad. Tacoma Rail connects with the Class I rail system (BNSF and UP) at Fife (near Tacoma) and Blakeslee Junction (near Centralia).

Line Status

Most of the business on the railroad is located in and around Fredrickson. Business at other locations has been sporadic and the development of new business on other line segments has been a priority of TRMD. Rock quarries and lumber mills at Eatonville and Morton, respectively, offer the most potential. Trial service involving both locations has proven to be promising and shippers are now interested in establishing permanent service.

Assistance Desired

Rehabilitation of the railroad from Fredrickson to Morton along with construction of new or rehabilitation of existing side tracks will be necessary to permit the resumption of regular rail service. While TRMD has applied for several different projects, the one subject to this analysis encompasses the line segment between Fredrickson (MP 14) and Eatonville (MP 34)—20 miles. Included in the project is rehabilitation of the line and the construction of a new 1,400-foot-long side track at Fredrickson. This project first appeared in the *2000 Amendment to the 1998 Washington State Freight Rail Plan*, which was not implemented. The details have changed in the intervening years. The project location is shown on page 12.

Benefit Cost Analysis

In accordance with RCW 47.76.230 (3)(a), the benefit-cost-analyses is conducted using the Federal Railroad Administration (FRA) methodology. The FRA standard 10-year planning horizon with a discount rate of 4.3 percent is employed in the analysis.

Project Alternatives

The project alternative is rehabilitation and new construction.

Null Alternative

The null alternative is continued operation over poor track with sporadic service.

Project costs

Initial rehabilitation of the track—tie replacement with the addition of ballast and surfacing, replacement of broken joints and limited rail relay—is estimated to cost $1,139,700, and construction of the new siding, $354,000. Thus project costs are $1,493,700 in year 1. Additional rehabilitation efforts are planned for year 5, estimated to cost $303,100 bringing total project costs to $1,796,800.

Project Benefits

The benefits accruing from project implementation are composed of both primary and secondary elements—transportation efficiency and highway impact avoidance. The benefits increase over a 10-year analysis period as rail traffic builds ranging from $143,532 in the first year to $645,596 in the last five years of the period. The salvage value of project materials adds another $778,350 in benefits at the end of the analysis period.

Benefit-Cost Ratio

Computation of the present values of the costs and benefits over the planning horizon results in a benefit-cost ratio of 2.68. The calculations are shown on pages 13 and 14.

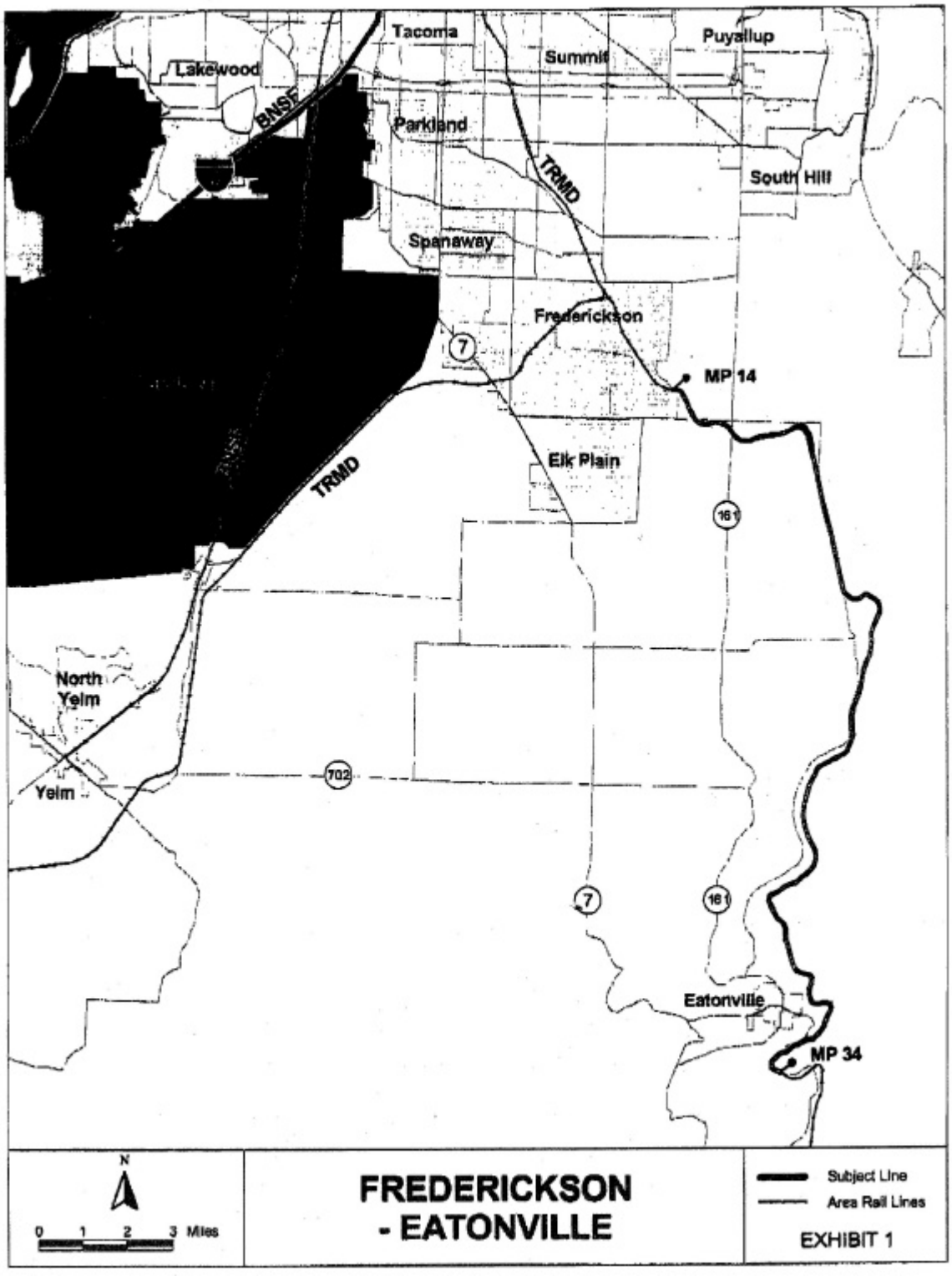
Tacoma
Lakewood
BNSF
Summit
Puyallup
Parkland
TRMD
South Hill
Spanaway
Frederickson
7
MP 14
Elk Plain
TRMD
161
North Yelm
Yelm
702
7
161
Eatonville
MP 34
N
0 1 2 3 Miles
FREDERICKSON
- EATONVILLE
Subject Line
Area Rail Lines
EXHIBIT 1

Exhibit
Benefit Cost Analysis - 10 Year Analysis
Tacoma Rail - Mountain Division
Frederickson - Eatonville

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Proj. Year	Cal. Year	Net Costs (Undiscounted)			Benefits (Undiscounted)				Present Worth Factor	Discounted Totals		
		Rehab	New Siding	Total	Transp. Efficiency	Highway Impacts	Salvage	Total		COSTS	BENEFITS	TOTAL
0	2002											
1	2003	1,139,700	354,000	1,493,700	56,000	87,532		143,532	1.0000	1,493,700	143,500	(1,350,200)
2	2004			0	168,000	262,596		430,596	0.9585	0	412,700	412,700
3	2005			0	168,000	262,596		430,596	0.9187	0	395,600	395,600
4	2006			0	112,000	262,596		374,596	0.8806	0	329,900	329,900
5	2007	303,100		303,100	252,000	262,596		514,596	0.8440	255,800	434,300	178,500
6	2008			0	392,000	262,596		654,596	0.8090	0	529,600	529,600
7	2009			0	392,000	262,596		654,596	0.7754	0	507,600	507,600
8	2010			0	392,000	262,596		654,596	0.7433	0	486,500	486,500
9	2011			0	392,000	262,596		654,596	0.7124	0	466,300	466,300
10	2012			0	392,000	262,596	778,350	1,432,946	0.6828	0	978,500	978,500
	Totals	1,442,800	354,000	1,796,800	2,718,000	2,450,896	778,350	5,945,246		1,749,500	4,684,500	2,935,000

Discount Rate	4.3%
NPV	$2,935,000
IRR	27.1%
B/C Ratio	2.68

Exhibit
Benefit Cost Analysis - 20 Year Analysis
Tacoma Rail - Mountain Division
Frederickson - Batonville

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Proj. Year	Caln. Year	Net Costs (Undiscounted)			Benefits (Undiscounted)				Present Worth Factor	Discounted Totals		
		New Constr.	NLV	Total	Transp. Efficiency		Salvage	Total		COSTS	BENEFITS	TOTAL
0	2002											
1	2003	1,139,700	354,000	1,493,700	56,000	87,532		143,532	1.0000	1,493,700	143,500	(1,350,200)
2	2004			0	168,000	262,596		430,596	0.9585	0	412,700	412,700
3	2005			0	168,000	262,596		430,596	0.9187	0	395,600	395,600
4	2006			0	112,000	262,596		374,596	0.8806	0	329,900	329,900
5	2007	303,100		303,100	252,000	262,596		514,596	0.8440	255,800	434,300	178,500
6	2008			0	392,000	262,596		654,596	0.8090	0	529,600	529,600
7	2009			0	392,000	262,596		654,596	0.7754	0	507,600	507,600
8	2010			0	392,000	262,596		654,596	0.7433	0	486,500	486,500
9	2011			0	392,000	262,596		654,596	0.7124	0	466,300	466,300
10	2012	3,054,700		3,054,700	392,000	262,596		654,596	0.6828	2,085,900	447,000	(1,638,900)
11	2013			0	392,000	262,596		654,596	0.6545	0	428,400	428,400
12	2014			0	392,000	262,596		654,596	0.6273	0	410,700	410,700
13	2015			0	392,000	262,596		654,596	0.6013	0	393,600	393,600
14	2016			0	392,000	262,596		654,596	0.5763	0	377,300	377,300
15	2017			0	392,000	262,596		654,596	0.5524	0	361,600	361,600
16	2018			0	392,000	262,596		654,596	0.5295	0	346,600	346,600
17	2019			0	392,000	262,596		654,596	0.5075	0	332,200	332,200
18	2020			0	392,000	262,596		654,596	0.4865	0	318,400	318,400
19	2021			0	392,000	262,596		654,596	0.4663	0	305,200	305,200
20	2022			0	392,000	262,596	2,678,350	3,332,946	0.4469	0	1,489,500	1,489,500
	Totals	4,497,500	354,000	4,851,500	6,636,000		2,678,350	14,391,206		3,835,400	8,916,500	5,081,100

Discount Rate	4.3%
NPV	$5,081,100
IRR	23.7%
B/C Ratio	2.32

Morton Industry Track

The Mountain Division of Tacoma Rail (TRMD) operates a former Weyerhaeuser Company railroad that runs from Tacoma to Chehalis with a branch from Fredrickson to Morton. The railroad, now owned by the city of Tacoma, has been the subject of project analyses appearing in several prior state freight rail plans and updates.

Service Area Transportation

Interstate 5 (I-5) is the principal highway serving the service territory of the railroad. A number of US and State routes connect with I-5 among them US 12 and SR 161 and 7. The latter two most closely follow the route of the railroad. Tacoma Rail connects with the Class I rail system (BNSF and UP) at Fife (near Tacoma) and Blakeslee Junction (near Centralia).

Line Status

Most of the business on the railroad is located in and around Fredrickson. Business at other locations has been sporadic and the development of new business on other line segments has been a priority of TRMD. Rock quarries and lumber mills at Eatonville and Morton, respectively, offer the most potential. Trial service involving both locations has proved to be promising and shippers are now interested in establishing permanent service.

Assistance Desired

Rehabilitation of the railroad from Fredrickson to Morton along with construction of new or rehabilitation of existing side tracks will be necessary to permit the resumption of regular rail service. While TRMD has applied for several different projects, the one subject to this analysis involves the construction of a sidetrack and improved loading area for a forest products industry at Morton, M.P. 66 (see map on page 17).

Benefit-Cost Analysis

In accordance with RCW 47.76.230 (3)(a), the benefit-cost-analyses is conducted using the Federal Railroad Administration (FRA) methodology. The FRA standard 10-year planning horizon with a discount rate of 4.3 percent is employed in the analysis.

Project Alternatives

The project alternative is new construction with rehabilitation of one bridge (replacement/repair of batter piles).

Null Alternative

The null alternative is continued operation.

Project Costs

Construction of the new siding is estimated to cost $369,300 for a 500-track and paved loading area. Bridge repairs are estimated to cost $150,000. Thus total project costs are $519,300.

Project Benefits

The benefits of the project consist of transportation efficiencies comprised of rail user and incremental railroad operating profits, and the salvage value of project materials at the end of the 10-year planning horizon. Annual transportation benefits are expected to average $175,000 annually and the salvage value of the project is $14,883.

Benefit-Cost Ratio

Computation of the present values of the costs and benefits over the planning horizon results in a benefit-cost ratio of 2.83. The calculations are shown on page 18.

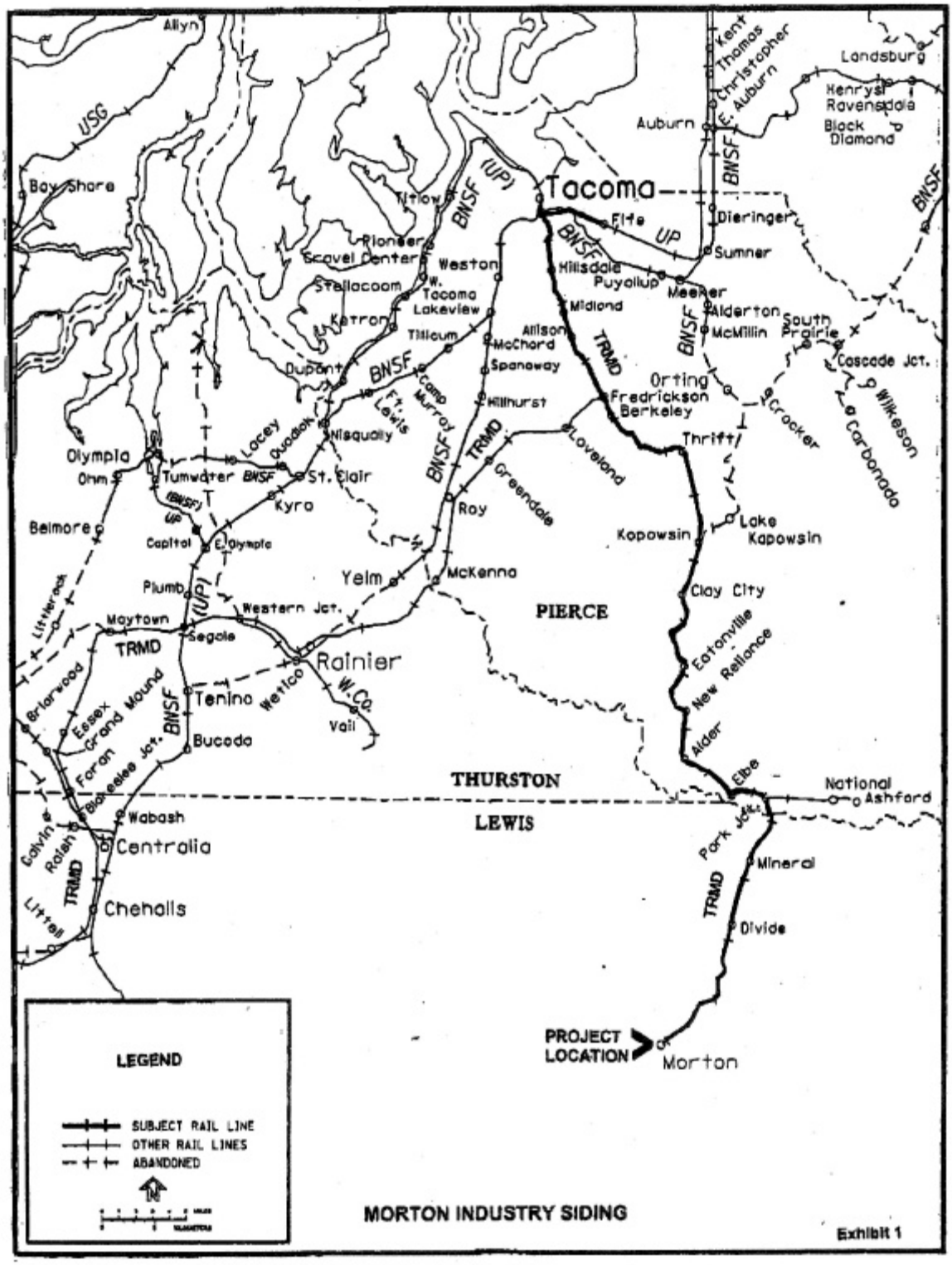
Allyn
USG
Bay Shore
Tacoma
Auburn
Kent
Thomas
Christopher
E. Auburn
Landsburg
Henrys
Ravensdale
Black Diamond
BNSF
(UP)
Titlow
Pioneer
Scovel Center
Weston
W. Tacoma
Lakeview
Stellacoom
Katron
Tillicum
Dupont
Fife
UP
Dieringer
Sumner
Hillsdale
Puyallup
Meeker
Midland
Alderton
McMillin
South Prairie
Cascade Jct.
Wilkeson
Carbonado
Crocker
Orting
Fredrickson
Berkeley
Thrift
Loveland
Greendale
Roy
Allison
McChord
Spanaway
Hillhurst
Camp Murray
Ft. Lewis
Nisqually
Lacey
Olympia
Ohm
Tumwater
St. Clair
Kyro
Belmore
Capitol
E. Olympia
Plumb
Yelm
McKenna
Western Jct.
Maytown
Segale
TRMD
Littlerock
Briarwood
Essex
Grand Mound
Tenino
Wetico
W.Co.
Vail
Rainier
PIERCE
Kopowsin
Lake Kapowsin
Clay City
Eatonville
New Reliance
Alder
Elbe
National
Ashford
Park Jct.
Mineral
Divide
Morton
PROJECT LOCATION
THURSTON
LEWIS
Foran
Blakeslee Jct.
Bucoda
Wabash
Centralia
Calvin
Rolen
Littell
Chehalis
LEGEND
SUBJECT RAIL LINE
OTHER RAIL LINES
ABANDONED
MORTON INDUSTRY SIDING
Exhibit 1

Exhibit 2
Benefit Cost Analysis - 10 Year Analysis
Tacoma Rail - Mountain Division
Morton

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Proj. Year	Cain. Year	Net Costs (Undiscounted)			Benefits (Undiscounted)			Present Worth Factor	Discounted Totals		
		New Constr.	Rehab	Total	Transp. Efficiency		Salvage	Total		COSTS	BENEFITS	TOTAL
0	2003								1.0000	519,300	175,000	(344,300)
1	2004	369,300	150,000	519,300	175,000			175,000	0.9585	0	167,700	167,700
2	2005			0	175,000			175,000	0.9187	0	160,800	160,800
3	2006			0	175,000			175,000	0.8806	0	154,100	154,100
4	2007			0	175,000			175,000	0.8440	0	147,700	147,700
5	2008			0	175,000			175,000	0.8090	0	141,600	141,600
6	2009			0	175,000			175,000	0.7754	0	135,700	135,700
7	2010			0	175,000			175,000	0.7433	0	130,100	130,100
8	2011			0	175,000			175,000	0.7124	0	124,700	124,700
9	2012			0	175,000			175,000	0.6828	0	129,700	129,700
10	2013			0	175,000		14,883	189,883				
	Totals	369,300	150,000	519,300	1,750,000	0	14,883	1,764,883		519,300	1,467,100	947,800

Discount Rate	4.3%
NPV	$947,800
IRR	43.3%
B/C Ratio	2.83